EXCISION OF CARCINOMA OF THE RECTUM BY THE COMBINED METHOD.

WITH REPORT OF THREE CASES.*

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THERE has been a distinct swing of the pendulum in the last six or seven years toward the combined method (the abdomino-perineal) for the removal of cancer of the rectum. As yet the comparative value of the operation cannot be said to be determined and therefore, the report of all cases treated by this method is still of interest.

Its completeness and thoroughness, the great desiderata of operations for carcinoma, are its chief qualifications for merit and, at the same time, its chief drawbacks, on account of the greater danger incurred. It remains to be proven whether the results in regard to recurrence are sufficiently better than by other methods to justify the additional immediate operative risk.

It seems to me that no definite procedure should be considered desirable for all cases but that the operation should be designed to meet the indications in each individual case. To be more explicit, I would perform the perineal operation in early and low lying growths in which the anal sphincteric control can be preserved and, in general terms, would reserve the combined method for larger and higher growths which otherwise would have to be approached by the sacral route and for those in which the anal sphincters have to be sacrificed. This statement, while in general terms correct, has to be further modified, as will appear later.

I also believe that, when employing the combined method, all hope of preserving the natural site for the outlet of the in-

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testine should be relinquished and that a permanent abdominal anus should be at once instituted. Exceptions to this last statement may occur in rare instances when it is exceptionally easy to draw the bowel down through the preserved sphincters. My reasons for preferring the establishment of an abdominal anus is that by this procedure the entire operation is rendered aseptic whereby the abdominal wound can be entirely closed and the perineal almost completely and with the minimum of drainage, advantages which are inestimable when the vitality of the patient has been lowered by a prolonged operation. For, if after removing the growth through the abdominal incision, the oral is united to the aboral segment either by the Maunsell method or through a parasacral incision, a second division of the bowel becomes necessary, the avenues of infection are opened and the operation is unduly prolonged. Even if the sphincter can be preserved, as in the Quénu method, the fixation of the oral end between its divided halves, consumes more time than the institution of an abdominal anus and introduces the element of infection into the perineal wound. Furthermore, in using the Quénu method, the temptation is always present either to divide the intestine too near the upper limit of the growth or to put it on too much tension, thus endangering its blood supply.

While it is often difficult to get the patient's consent to an abdominal anus, although it is far more efficacious and cleanly than an incompetent perineal or sacral one, I have felt so strongly about it that I have refused to operate unless I had consent for an abdominal anus in cases where the combined operation seemed best.

The advantages of the combined method have been dilated upon so often in various papers that it seems almost needless to repeat them. Besides, the opportunity of a far more radical removal than is possible by other methods, the chief advantages seem to me to be: first, that the abdominal approach permits a much fairer estimate as to the possibility of removal and, if on account of lymphatic or metastatic extensions, it is found to be impossible, the patient is spared a mutilating and danger-

ous operation: and secondly, that the convalescence may be much shortened on account of aseptic healing, as has already been mentioned.

The three following cases illustrate fairly well the above arguments.

CASE I.—Mrs. G., manicurist, aged thirty-two years, was admitted to the Roosevelt Hospital in May, 1905. For two years she had had hemorrhage from the rectum, the last amounting to a pint, on the day of admission. For two and one-half years she had had increasing constipation. For two years pain, chiefly when at stool. She had had one child two and a half years before admission, the delivery being instrumental. Local examination revealed a large mass two inches above the anus, filling the rectum. It was fixed, lobulated and soft and friable, bleeding freely. Neither a tube or enema could be made to pass through it. Numerous indentable masses were felt throughout the abdomen. There was a small umbilical hernia. The heart, lungs and urine were negative. The general nutrition was poor. The tongue was coated but moist. The red cells were 3,800,000. Temperature was 98.8, pulse 88, respiration 22.

Operation, three days after admission. Nitrous oxide, ether anesthesia. Trendelenberg position. An incision four inches long, was made through the linea alba to the pubes. The mass was found to extend upward to above the middle of the sacrum. No lymphatic involvement was made out. The intestine was divided at the lower part of the sigmoid flexure; the ends inverted and the oral end brought out through an intermuscular incision just within the left anterior superior spinous process of the ileum, and fastened there with a few sutures, the end being left unopened. The aboral end was then drawn down over the pubes, the superior hemorrhoidal vessels ligated, the reflections of the peritoneum divided with scissors on either side and then across the front of the rectum at the bottom of Douglass' cul de sac. The bowel was then freed down to the levators by blunt dissection. So far, the operation was practically devoid of hemorrhage. The abdominal wound was then covered with a moist towel and the patient placed in the lithotomy position. The anus was closed with a heavy purse string suture of silk and then its external surface cauterized with the Pacquelin cautery. The region was recleansed

and a sagittal incision made circumscribing the anus from the perineal body in front nearly to the tip of the coccyx. The dissection was carried up, removing the sphincters with the rectum and the bowel drawn down and out. The perineal wound was then repaired by suturing the levators together with catgut and the more superficial portions with catgut and silk worm gut, a tube being placed in the posterior angle for drainage. The patient was then again placed in the Trendelenberg position, the peritoneum repaired at the bottom of the pelvis and the abdominal wound closed with a tier suture without drainage. Time of operation, two hours and twenty-six minutes. She was returned to the ward with little shock. Temperature 98°, pulse, 120, respiration 40.

The post-operative course was exceptionally smooth; there was a reactionary rise of temperature to 101.8°, which immediately subsided to normal and remained so. The wounds healed per primam with the exception of slight infection about the drainage tube in the perineal wound. The intestine was opened at the artificial anus at the end of thirty-six hours. She was allowed up on the nineteenth day. The portion of intestine removed was distended and hardened in formalin. On longitudinal section it showed a remarkable valvular arrangement of the neoplasm. It involved three and one-half inches of the rectum, invading the perirectal tissues somewhat toward the hollow of the sacrum, and consisted of a number of dendritic masses filling the lumen and folded downward so that the fecal current could pass downward, but not even water could be injected upward. On section, it showed the structure of a malignant adenoma.

I have been unable to follow this patient further than that she was reported in good health six months after the operation.

The most noteworthy feature of this case was the remarkably smooth convalescence. The operation was very long, unnecessarily so, it being the first case I had done by this method. In my second case the length of the operation was shorter by nearly an hour. In this case, however, I was able to close the peritoneum over the intestine in the floor of the pelvis before it was removed and could, consequently, close the abdominal wound, the transfer of the patient from the

lithotomy back to the Trendelenberg position thus being saved.

CASE II.—Mr. W., a farmer, aged sixty-six years, was admitted to the Roosevelt Hospital in June, 1906. He had had hemorrhages from the rectum for one year and pain for six months. Obstruction had not been marked. He had been cauterized for piles. He had gradually lost flesh and strength. He had had pneumonia five years before, otherwise his previous and family history was negative. Local examination revealed an ulcerated growth in the anterior wall of the rectum, extending from just above the anal canal upward for a distance of three inches. It did not obstruct. His general condition was unfavorable. He was emaciated, somewhat anæmic; the heart sounds were feeble; the arterial walls thickened; the lungs emphysematous; the abdomen negative; the tongue coated; the urine contained a trace of albumen and a few hyaline casts: hemoglobin 75 per cent.; red cells 4,600,000. Temperature 98°, pulse 108, respiration 24.

Operation: Nitrous oxide gas anesthesia; time, one hour and thirty-five minutes. The same procedure was carried out as in the preceding case except as has been already stated, the abdominal wound was closed before removing the rectum through the perineal incision. In this case the levators could not be sutured together. Drainage was by a cigarette drain instead of by a tube as in the preceding case. The operation was followed by considerable shock and he was given an infusion, but at no time did his condition seem to be precarious. The highest temperature, 101.6°, was reached at the end of twenty-four hours, but immediately fell to normal, fluctuating between 99° and 101° for six days, after which it remained normal. The pulse fluctuated between 88 and 112 on the second day. The abdominal wound healed per primam but the cigarette drain did not drain properly and there was some infection of the perineal wound and about one-third of it healed by granulation. He was rather feeble and convalesced slowly but surely and was discharged, healed, at the end of five weeks.

The growth proved to be adeno-carcinoma.

He remained well for about twelve months and then failed rapidly, dying at the end of fifteen months, of "internal cancer," there being no evidence of intestinal recurrence.

This patient ordinarily would be considered an unfavorable subject for any operation, yet stood it well and made a satisfactory operative recovery.

In the following case a preliminary artificial anus became necessary on account of the development of acute obstruction resulting from perforation and periproctitis. It also illustrates under what difficulties the operation is possible.

CASE III.—Miss R., forty years of age, was admitted to the Roosevelt Hospital on July 9, 1907. The only history obtainable from her was increasing constipation for a period of six months, followed four days before admission, by a sudden stoppage and a feeling of discomfort in the rectum. Catharties were taken without relief, but gas and small quantities of feces were obtained by enemata which were only given with difficulty. On admission, there was a growth extending from the upper portion of the anal canal upward, blocking the rectum and involving the posterior vaginal wall. It seemed to be immovably fixed but was not particularly sensitive. Her general condition was fair, red blood corpuscles 3,600,000, hemoglobin 80 per cent., leucocytes 12,200; polymorphonuclears 89 per cent., temperature 100.6°, pulse 98, respiration 24.

She was kept for five days under observation, the intestine being gradually emptied by irrigations and enemata. The obstruction seemingly increasing, an inguinal colostomy was done, the gut being opened on the second day after operation. When under ether, the growth was carefully examined and found to be fixed and apparently extensively infiltrating, which condition was afterward proved to be largely due to periproctitis. Two days later this became more evident and the abscess was opened by an incision lateral to the anus. The abscess extended to above the levators but gradually cleared up, when it was found that the growth, although extensively infiltrating, could probably be removed, which was done two weeks from the institution of the colostomy. Under nitrous oxide, ether anesthesia, the colostomy wound being isolated with rubber tissue, a five inch median incision was made, the patient being in the Trendelenberg position. The intestine was divided far enough below the colostomy to allow inversion and the remainder of the intestine with the growth, removed in the same manner as in the first case reported.

The perineal excision, however, was much more extensive, including the entire posterior vaginal wall, the ischiorectal fat and the greater part of the levatores ani muscles. The resulting cavity seemed enormous and was closed with difficulty. The operation consumed two hours and thirty minutes, being prolonged rather than otherwise, by the presence of the colostomy. She was returned to bed in marked shock, the pulse being 140 and the temperature 96°. She responded well to heat and an infusion. The highest temperature, 100.4°, was reached on the second day, but after that remained normal. Healing of the abdominal wound was immediate but the perineal wound closed slowly by granulation. She, however, left the hospital within three weeks with a small granulating sinus.

Examination of the specimen showed that a perforation had occurred at the upper limit of the growth which caused the periproctitis and sudden obstruction. The difficulties of excision were greatly increased by the presence of this suppurating sinus and it seemed remarkable that healing of the perineal wound occurred as rapidly as it did. The entire absence of sepsis following the operation is also noteworthy. The after-course of this patient, however, was far less favorable. A pulmonary metastasis appeared four months after operation, she dying two months later. The metastasis evidently was due to implication of the systemic veins in the tissues outside of the rectum. There was no local recurrence. The growth was an adeno-carcinoma.

These three cases throw little light on the curative value of the combined operation. In regard to the immediate operative risk, they impressed me strongly with its comparative safety. Although the shock may be great, the entire exclusion of the element of infection by means of the institution of an abdominal anus remote from the operation wounds, is greatly in its favor. Although patients are momentarily depressed by the severity of the operation, there is nothing in the condition of the wounds to interfere with convalescence. The dangers of the operation therefore, are restricted to the ordinary ones of shock and the anesthetic, it only being necessary that the technique should be good to practically ensure success. My own experience and that of others, shows that the mortality

of the low operations is largely caused by sepsis. In personal communications with other surgeons, I have gained from them the impression that their mortality in the combined operation is higher than in the parasaeral route. I am inclined to attribute this to the fact that in many of their cases, complicated suture operations are done, the abdominal anus not being resorted to. There are certain cases in which the combined operation should be avoided if possible, notably obese males, in whom all abdominal operations are attended with great danger, but particularly this one, on account of the difficulty of handling the fatty intestine in a narrow pelvis and the large incisions necessary. Moreover, women, not only on account of the roomier pelvis but because of their insusceptibility to pelvic invasions, are far better fitted for this operation than males.

A résumé of my present opinions in regard to this subject may be briefly stated as follows:

That no single operative procedure for carcinoma of the rectum should be always carried out to the exclusion of others.

That the decision between the perineal and combined methods depends chiefly upon the feasibility of preserving the efficiency of the sphincter ani muscle, provided the growth is removable by the low route.

That when the combined method is used, an immediate abdominal anus should be formed unless the continuity of the natural passages can be restored with exceptional facility.

That institution of a colostomy at a previous operation is an embarrassment rather than an aid.